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ABSTRACT

Designed for use by teacher educators, this module provides a framework for examining current practice in training preservice teachers to deal with slow learners in the regular classroom. The focus is on establishing peer and cross-age tutoring programs. A rationale for tutoring is given by describing the relation between academic engaged time and achievement. The major differences between tutoring and group instruction and the effects of tutoring on achievement are discussed as well as the cost effectiveness of tutoring. The following components of an effective tutoring program are discussed: (1) structured lesson format; (2) instructional content; (3) mastery learning; (4) measurement of performance; (5) tutor training; (6) frequency and duration of tutoring; and (7) supervision of tutoring. The benefits of tutoring for the tutor are explained. A rating scale is included by which a teacher educator can assess the degree to which the knowledge and practices identified in the module are prevalent in the existing teacher training program. Appendixes include sample structured lesson formats for specific subjects. (JD)

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PEER AND CROSS-AGE TUTORING

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Extending the Challenge:

Working Toward a Common Body of Practice for Teachers

Concerned educators have always wrestled with issues of excellence and professional development. It is argued, in the paper "A Common Body of Practice for Teachers: The Challenge of Public Law 94-142 to Teacher Education," that the Education for All Handicapped Children Act of 1975 provides the necessary impetus for a concerted reexamination of teacher education. Further, it is argued that this reexamination should enhance the process of establishing a body of knowledge common to the members of the teaching profession. The paper continues, then, by outlining clusters of capabilities that may be included in the common body of knowledge. These clusters of capabilities provide the basis for the following materials.

The materials are oriented toward assessment and development. First, the various components, rating scales, self-assessment, sets of objectives, and respective rationale and knowledge bases are designed to enable teacher educators to assess current practice relative to the knowlege, skills, and commitments outlined in the aforementioned paper. The assessment is conducted not necessarily to determine the worthiness of a program or practice, but rather to reexamine current practice in order to articulate esential common elements of teacher education. In effect, then, the "challenge" paper and the ensuing materials incite further discussion regarding a common body of practice for teachers.

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Second and closely aligned to assessment is the development perspective offered by these materials. The assessment process allows the user to view current practice on a developmental continuum. Therefore, desired or more appropriate practice is readily identifiable. On another, perhaps more important dimension, the "challenge" paper and these materials focus discussion on preservice teacher education. In making decisions regarding a common body of practice it is essential that specific knowlege, skill and commitment be acquired at the preservice level. It is also essential that other additional specific knowledge, skill, and commitment be acquired as a teacher is inducted into the profession and matures with years of experience. Differentiating among these levels of professional development is paramount. These materials can be used in forums in which focused discussion will explicate better the necessary elements of preservice teacher education. This explication will then allow more productive discourse on the necessary capabilities of beginning teachers and the necessary capabilities of experienced teachers.

In brief, this work is an effort to capitalize on the creative ferment of the teaching profession in striving toward excellence and professional development. The work is to be viewed as evolutionary and formative. Contributions from our colleagues are heartily welcomed.

This paper presents one module in a series of resource materials which are designed for use by teacher educators. The genesis of these materials is in the ten "clusters of capabilities," outlined in the paper, "A Common Body of Practice for Teachers: The Challenge of Public Law 94-142 to Teacher Education," which form the proposed core of professional knowledge needed by professional teachers who will practice in the world of tomorrow. The resource materials are to be used by teacher educators to reexamine and enhance their current practice in preparing classroom teachers to work competently and comfortably with children who have a wide range of individual needs. Each module provides further elaboration of a specified "cluster of capabilities" - in this case, establishing peer and cross-age tutoring programs.

Objectives for Teacher Educators and

for Incorporation into Teacher Education Curricula

Objectives for the Module

The purpose of this module is:

1. To provide a rationale for tutoring by describing:
   - A. the relation between academic engaged time and achievement;
   - B. major differences between tutoring and group instruction;
   - C. the effects of tutoring on achievement;
   - D. cost effectiveness of tutoring.
2. To describe the components of an effective tutoring program by listing and discussing the following items:
   - A. structured lesson format;
   - B. instructional content;
   - C. mastery learning;
   - D. measurement of performance;
   - E. tutor training;
   - F. frequency and duration of tutoring;
   - G. supervision.
3. To explain the benefits of tutoring for the tutor.

Reasonable Objectives for Teacher Evaluation

Upon completion of a teacher preparation program, a teacher be able to:

1. Provide a rationale for and explain the benefits of peer and cross-age tutoring programs.
2. Design a structured lesson format for tutoring including learning tasks and content specification, correction procedures, and mastery requirements.

Contents

Within this module are the following components:

Set of Objectives - Page 1
The objectives focus on the teacher educator. They identify what can be expected as a result of working through the materials. The objectives which apply to teachers are also identified. They are statements about skills, knowledge, and attitudes which should be part of the "common body of practice" of all teachers.

Rating Scale - Page 2
A scale is included by which a teacher educator could, in a cursory way, assess the degree to which the knowledge and practices identified in this module are prevalent in the existing teacher-training program. The rating scale also provides a catalyst for further thinking in each area.

Self-Assessment - Page 3
Specific test items were developed to determine a user's working knowledge of the major concepts and principles in each subtopic. The self-assessment may be used as a pre-assessment to determine whether one would find it worthwhile to go through the module or as a self check, after the materials have been worked through. The self-assessment items also can serve as examples of mastery test questions for students.

Rationale and Knowledge Base - Page 6
The body of the module summarizes a rationale for peer and cross age tutoring programs, their empirical support, the components of an effective tutoring program, considerations in implementing a tutoring program and benefits to tutors.

References - Page 34
Following the list of references is a partial bibliography of important books and articles.

Appendices - Page 36
Material in Appendices A, B, C, D, and E support training activities. Appendix F is a key to the Self-Assessment.

Articles - Page 36
Three brief articles accompany the aforementioned components. The articles support and expand on the knowledge base.

3. Design a tutor training program matching the lesson format and measurement requirements.
4. Design a measurement system consistent with the learning tasks.

Rating Scale for Teacher Preparation Programs

Check the level that best describes your present teacher education program on the topic of cross-age tutoring.

1. Students being prepared for teaching would not systematically use cross-age or peer tutoring as an intervention to increase children's academic achievement. They would not know how to design a lesson, measurement system, training program, or establish a positive atmosphere with principal, staff, or parents to initiate such a program. Occasionally they might ask a peer or intermediate helper-volunteers to help with math facts or a reading workbook page, but in general they are unaware of the potential benefits of tutorial models.
2. Students being prepared for teaching have been introduced to the strategies involved in peer and cross-age tutoring and are aware of the potential benefits of tutoring. They may attempt to arrange an <u>informal</u> tutoring program within their classroom. However, they would not know the components of an effective tutoring program.
3. Students being prepared for teaching are aware of the efficacy of tutoring programs for both the tutee and the tutor. They realize a structured lesson, measurement system, training program, careful supervision, etc. are critical to a successful program. However, they are not prepared to design lessons or develop training programs and evaluation systems. They would know where to locate the necessary information if the make-up of their classroom indicated a need for a systematic intervention such as tutoring for low performers.

4. Students being prepared for teaching can summarize the research on tutoring and describe effective components of tutoring programs. They can design a tutoring program in one or two academic areas, and can outline how tutors would be selected, trained, and monitored. They can also suggest ways in which the tutoring program might be evaluated.
5. Students being prepared for teaching know how to establish a peer or cross-age tutoring program, schedule tutoring sessions on a daily basis, train and supervise tutors, and have a large repertoire of structured lessons and carefully sequenced tasks to implement in the basic skills. They can devise measurement systems to evaluate the program's effectiveness, and they know how to approach administrators, staff, and parents to gain support. Moreover, they have had actual experience in designing tutor programs, training and supervising tutors and evaluating the programs' effects.

Self-Assessment

1. Research evidence suggests that tutoring is a worthwhile intervention for children who are:
   a) learning disabled
   b) mentally retarded
   c) economically disadvantaged
   d) any of the above

2. Children spend the largest portion of their day in schoool:
   a) working in large groups
   b) working in small groups
   c) working privately
   d) tutoring or being tutored
3. Academic Engaged Time refers to the time:
   a) teachers spend teaching academic subjects
   b) allotted for academic instruction in the classroom
   c) children spend reading, writing, and doing arithmetic assignments
   d) children spend working on academic assignments of moderate difficulty
4. Research suggests that in general children learn:
   a) more when tutored vs. when taught in small groups
   b) about equally whether tutored or taught in small groups
   c) certain subjects better in small groups and certain subjects better when tutored
   d) more when working privately
5. Research suggests that the following are important factors in effective tutoring programs:
   a) structured teaching formats and mastery learning
   b) high interest reading materials and short activities
   c) morning programs and older tutors
   d) same sex pairings and brief lessons
6. The overlap between various basal reading programs:
   a) tends to be quite high overall
   b) is high in words taught, but not comprehension skills
   c) is high in comprehension skills, but not in words taught
   d) is moderate at best

True and False

7. ____ Tutoring should occur twice daily to be effective.
8. ____ Tutoring produces greater effects in reading than in math.
9. ____ Tutors tend to get bored and quit unless the teacher regularly changes the lessons.
10. ____ Tutees should be required to master content before moving on.
11. ____ Cross-race pairings are best avoided.
12. ____ Children prefer to tutor other children of the same sex.
13. ____ Tutoring sessions should occur for more than 10 minutes.
14. ____ Tutors should be trained before beginning their jobs.
15. ____ Once tutor programs are up and running teachers can reduce supervision to 1 or 2 days/week.
16. ____ Tutors should measure tutee performance daily.
17. ____ Tutors should construct their own lessons.
18. ____ Tutors should tutor no more than 3 days weekly.
19. ____ Tutors' grades in their classes often suffer somewhat when they begin tutoring.
20. ____ Tutors should carefully choose which errors to correct.
21. ____ Within-class tutoring programs should be avoided.
22. ____ It is generally better for tutoring content to match the regular classroom curriculum.
23. Provide a rationale for tutoring based on: academic engaged time; individual differences in learning rates; and research on tutoring effects and cost efficiency.

24. Discuss each of the following components of tutoring programs:

    a) structure of lesson formats

    b) content of lessons

    c) mastery learning

    d) performance measurement

    e) tutor training

    f) frequency and duration of tutoring lessons

    g) selecting and pairing tutors with learners

    h) supervision

25. Describe three organizational structures for tutoring programs.

26. Devise a simple form with which tutors could record reading performance daily and with which teachers could monitor individual children.

27. List several ways to maintain tutor involvement and interest.

28. Discuss the benefits of tutoring on the tutors.

29. Devise a lesson format for reading tutoring.

PEER AND CROSS-AGE TUTORING

The Rationale For Tutoring

Children with learning disabilities, mental retardation, behavior disorders, and sensory handicaps have one characteristic in common. They acquire basic academic and social skills at a slower rate than do their non-handicapped peers. In this respect they are similar to many children who are raised in impoverished environments or whose native language is other than English. To the extent that these children fail to master basic academic and social skills which society holds to be essential, they have been and will remain cut off from many benefits enjoyed by their normally achieving peers.

Challenge to Teachers

The task facing professionals who teach these children is clear enough--how to raise achievement rates and thereby reduce the discrepancy between handicapped children and their peers. Teachers face a hefty challenge in arranging humane yet effective conditions which will maximize cognitive and emotional growth for handicapped children. By itself, teaching is not that difficult. Teachers with whom we have talked are confident that they could teach almost anything to nearly anyone, if they had the time. The fact that Maxine requires 80 repetitions of a rule before she can apply it consistently is a problem only if her teacher has insufficient time to provide the repetitions. Of course, time spent with Maxine is probably time taken away from other students who have already learned Maxine's rule or who are at an earlier spot in the curriculum. Whether or not, or when, Maxine learns the rule will probably not be determined by her teacher's ability to teach, but by

her teacher's available time. The problem faced by Maxine's teacher--that of getting sufficient time for teaching Maxine--is a function of class size and of the varieties of human differences found in schools.

Accommodating Individual Differences

Two types of human differences contribute to the teacher's problem in providing adequate instructional time. One is the difference in what children already know. Some children need to be taught to count and to read. Others arrive at school with these skills intact. Some need to be taught how to draw cause and effect inferences; others are already quite capable in this regard. Some need to be taught the meaning of the words left, right, under, damage, bulge, and irritated. Others have learned these meanings already. Differences in previously acquired knowledge complicate the teacher's world because they mean that different children will require instructional time on different learning tasks.

The second type of difference among children which complicates the job of teaching was already illustrated in the case of Maxine. Children require different amounts of instruction to master the same skill. If a teacher has four children who need to learn the sounds for /a/, /m/, /t/, and /s/, she can form a small group and provide daily instruction on these elements. A problem arises when one student learns the sounds after 1 day, the second student after 3 days, the third after 5, and the last finally masters the sounds after 8 days. Such situations are commonplace, and there are almost no completely satisfactory resolutions for this problem. One solution, keeping all students on the same task until everyone has learned, will impede the faster students' progress. Alternatively, abandoning the task before all students have mastered it will almost certainly guarantee subsequent failure for the slow

students. Breaking up the larger group into two smaller groups is a partial solution, but even then remaining differences in learning rate will prevent some students from making optimum progress. A second difficulty with this latter solution is that it reduces available instructional time. To illustrate: if 20 minutes were originally scheduled for instructing a group of four students, then dividing this group into two reduces instructional time for each group to 10 minutes. Thus, attempts to provide for individual differences often result in a reduction of instructional time for the individual student.

Academic Engaged Time and Content Coverage

The loss of real instructional time, whether resulting from activities extraneous to teaching or from attempts to accommodate for individual differences (as in creating more groups with fewer instructional minutes available for each), would appear to be a serious matter. Recent research supports this common sense view. Data gathered in elementary classrooms have identified "academic engaged time" as a highly significant correlate of achievement--one that distinguishes classrooms which produce above and below average achievement levels.

What exactly is meant by academic engaged time? The concept, originally developed by Berliner, Fisher, Filby, and Marlieve (1976), refers to the time a student spends engaged in academically relevant tasks which are moderately difficult. Academic engaged time is not the same as allotted instructional time. A typical elementary classroom allots from 90 minutes to 2 hours daily to language arts instruction. Observations of what the students do during this period, however, reveal that far fewer minutes are actually spent engaged in a learning task.

Academic engaged time is highly related to content coverage, which itself has been shown to be consistently and significantly related to student achievement gain. In summarizing research on effective classrooms, Rosenshine and Berliner (1978) concluded:

> A fairly consistent pattern emerges from the studies cited. The primary finding is that time spent engaged in relevant content appears to be an essential variable for which there is no substitute. Teachers who make a difference in students' achievement are those who put students into contact with curriculum materials and find ways to keep them in contact (p. 12).
>
> Within the area of instruction in basic skills in primary grades, the major skill needed by a teacher is that of obtaining 'sufficient' content coverage and academic engaged minutes per day (p. 13).

Increasing Academic Engagement

Teacher-led instruction. There are multiple means available to teachers for increasing students' active engagement in academic tasks. In terms of teacher-led instruction, the procedures developed by the Oregon Direct Instruction group (Becker & Englemann, 1978; Becker & Carnine, 1978) are an extremely effective means of obtaining students' active involvement in learning. The fast-paced, small group instructional format used in the Direct Instruction Model requires frequent student responding, guarantees immediate feedback, and specifies effective procedures for correcting errors. For example, observation of a Distar group lesson (one of the Direct Instruction Programs) leaves one with no questions about student engagement. These small group instruction procedures can be adapted rather easily to other commercial

reading programs as well as to other instructional domains. For information on these adaptations one can consult a text by Carnine and Silbert (1979) entitled Direct Instruction Reading.

Working privately. Of course, elementary and secondary students spend only a portion of their time in teacher-led instruction. Descriptive studies in elementary classrooms indicate that children, 6-11 years old, spend at least half of their school day working privately (Rosenshine & Berliner, 1978). Private, seat work assignments must be selected with care or it will make no difference that students are task oriented when working by themselves. Assuming that private work assignments are valid, then effective classroom management procedures become important in helping to maintain attention and minimizing disruptions or other distractions.

One-to-one instruction. Since every skill cannot be taught simultaneously, one ordinarily develops a sequence of instructional objectives. Ideally a student can concentrate on mastering one objective at a time before facing the next objective in the sequence. However, as noted earlier, grouping students for instruction usually prevents individuals from making maximum progress. Usually a child who is instructed in a group will be forced either to proceed to the next objective before attaining mastery of the current objective or to remain on an objective she has already mastered while waiting for her peer group to attain adequate performance. As long as individual students vary in their learning rates, small group instruction will produce less than optimum rates of progress through an instructional sequence, since, by its nature, grouping for instruction guarantees that some children will not receive instruction on an objective appropriate for them. Thus, even though a well designed group format can produce high levels of task engagement, the academic engaged time for an individual student (learning

relevant content) will be less than the total instructional time for the group. From this analysis, it appears that academic engaged time could be augmented by substituting some one-to-one instruction for some small group sessions and private seatwork assignments.

Unfortunately, teachers are not themselves capable of providing much individual instruction, as evidenced by the amount of group instruction and private work observed in classrooms. In fact, there is some correlational evidence that teachers who themselves devote much time to individual students are overall less effective, presumably because attention to the individual detracts from the time available for other class members. Stallings and Kaskowitz (1974) report that time spent working with just one or two students was negatively related to achievement gain by the class, but achievement gain was positively related to time teachers spent working with small or large groups. Obviously, then, if teachers desire to increase academic engaged time through one-to-one instruction, they must expand their reserve of instructional personnel. They need not look far. Some of the best helpers are other children who can be recruited from inside their own school.

Research Support for Tutoring

A meta-analysis of 65 tutoring programs was recently reported (Cohen, Kulik, & Kulik, 1982). The effects of tutoring programs on academic performance for the tutee were larger in well structured and more cognitively oriented programs. Tutoring produced larger effects in well sequenced "lower level" skills (e.g., math) than in reading. Tutoring programs of a shorter duration had larger student gains. Tutors had a better understanding of the subject matter they tutored in. Student attitudes towards subject matter were more positive in classrooms with tutoring programs. This effect was shared by tutor and tutee.

Several studies have contrasted the effects of tutorial and small group instruction. Jenkins, Mayhall, Peschka, and Jenkins (1974) compared teacher-led small group instruction with one-to-one instruction delivered by cross-age tutors. The tutored children were learning disabled and mentally retarded youngsters receiving service in special education resource rooms, and the tutors were regular third and fourth grade students who had undergone training and had worked as tutors for several months. In this research, each learner served as her own control, and was instructed daily in both the teacher-led and the tutorial conditions. Learning was observed across several tasks including word recognition, oral reading, spelling, and math facts. Learning was greatest in the tutorial condition, with one-to-one instruction from a peer exceeding teacher-led small group instruction.

Program costs are another factor that deserves attention since public education is expensive and grows more expensive every year. Even though the number of children enrolled in schools declines annually and the school budget grows, the real money available to districts has shrunk as a function of mounting inflation reflected in increased costs for salaries, materials, and building maintenance. Moreover, education budgets are further strained by the fact that public schools, especially in urban settings, are faced with educating an increasingly large portion of high cost, hard-to-teach children. Proportionately, handicapped and economically disadvantaged children are more highly represented in today's public schools than was true in times past.

A group of special educators in Vermont recently conducted a model cost-effectiveness study in which they compared two forms of service delivery to handicapped children, one of which involved cross-age tutoring (Armstrong, Canlon, Pierson, & Stahlbrand, 1979). For several years, school districts in Vermont have employed paraprofessional teacher aides to tutor handicapped

students. The aides were trained and supervised by a special education consulting teacher who designed and monitored individualized teaching programs for each special education student. Consulting teachers, in combination with the paraprofessional aides, have proven remarkably effective in assisting handicapped students to remain in the mainstream of regular education (McKenzie, 1972).

Working within this context, Armstrong and her colleagues designed an alternative means of service delivery. They recruited and trained high school seniors to work with consulting teachers in tutoring special education students who were failing to master regular education curriculum objectives. Throughout the school year, these high school students tutored three periods a week and conferred with the consulting teacher one additional period weekly. Their students who came from first through fourth grade classrooms gained an average of 1.7 months for each month tutored, exactly the same gain registered by equivalent students who were tutored by paraprofessional aides. Armstrong et al. maintained complete data on the costs associated with training and supervising both the high schoolers and the aides, and the additional cost of salaries for the latter. Results showed that expenses associated with the paraprofessionals were over three times greater than those for the high school tutors, even though both groups were equally effective in facilitating student achievement. The high school students acquired useful teaching, measuring, and managing skills and rated their experience as highly rewarding.

In summary, several lines of research suggest that one-to-one tutoring has much to offer even when it is conducted by another child. Among the apparent benefits of tutoring are increased academic engaged minutes, more learning within a single lesson, and more optimum progressions through curriculum sequences for the individual learner.

What Makes An Effective Tutoring Program?

Whether or not a program can be regarded as effective depends upon its goal. Tutoring programs have been devised to achieve a variety of goals. We recommend that tutoring programs be designed with the primary goal of helping the children who are tutored. For these programs, effectiveness is usually defined in terms of the extent to which they succeed in improving school achievement, a cultural imperative. Our discussion of factors related to program effectiveness will focus on this latter situation, where tutor or learner gain constitutes the outcome of interest. In a later section we discuss the potential benefits to tutors who participate in these programs.

While there have been many program evaluations of tutoring, relatively few are systematic attempts to determine the particular components needed to make a program effective. In addition to the analysis of Cohen et al., previously mentioned, several studies provide research support for the elements that we feel are necessary for an effective tutoring program.

An excellent study was conducted by Ellson, Harris, and Barber (1968). This research contrasted Programmed Tutoring with Directed Tutoring and with classroom instruction alone for first grade students from low-income families. Programmed Tutoring was characterized by specifically designed instructional content, which was derived from the Ginn Reading Series, along with highly prescribed instructional procedures for tutors to employ. All tutors followed identical steps in presenting stimuli, giving feedback, and requiring pre-established performance levels before allowing their students to proceed through the program (i.e., teaching to a mastery criterion). In contrast, Directed Tutoring allowed far more flexibility in the selection of instructional content and procedures, and did not prescribe criterion levels

for students. Still, content and procedures were not taken lightly; they were conscientiously designed by remedial reading teachers and reading specialists for application by the tutors. Included among the instructional materials were readiness books, the Ginn first grade series, Dolch word games, and supplementary reading stories. Classroom reading instruction for both of the tutoring conditions as well as for the non-tutored classroom control group was based on the Ginn reading series. In addition to these comparisons, the research provided information on the effect of one vs. two 15-minute daily tutoring sessions. The study, which lasted an entire school year, produced extremely interesting results. Regular classroom instruction plus Directed Tutoring which featured readiness activities, games, and enrichment lessons given on a daily basis was no more effective than classroom instruction by itself. This finding came as a great surprise to all who had observed the Directed Tutoring sessions and prompted the authors to caution against evaluating the product of any tutoring program on the basis of its apparent effectiveness. Looks can be deceiving! According to Ellson et al.,

> In operation, Directed Tutoring seemed more than satisfactory: the children appeared to be learning and to enjoy the tutoring sessions. Their teachers generally approved of the tutoring activities. The tutors were enthusiastic about their work and close personal relationships with the children tutored were very apparent. Both tutors and those who observed them had no doubts that a real contribution was being made to the children's reading skills...
>
> But the favorable impression of Directed Tutoring as a teaching procedure was not supported by evidence that it improved reading achievement... This suggests the need for caution in evaluating any such program on the basis of apparent good teaching practice rather than hard achievement data. [italics added] (p. 343).

In contrast, the children receiving Programmed Tutoring twice daily made highly significant achievement gains. Notably, providing only one session per day of Programmed Tutoring did not discernibly improve the children's achievement relative to their achievement as a result of classroom instruction alone.

The research by Ellson et al. has high face validity inasmuch as it was conducted in several elementary schools, with many children participating in each condition, lasted for a full school year, and used as its instructional content materials and procedures which are commonly available to teachers. The finding that two daily 15-minute tutoring sessions affected achievement, but that one session did not, has clear implications for structuring the length or duration of tutoring. Also important was the rather startling finding that an entire year of Directed Tutoring did not help the children read better; it demonstrated that merely increasing instructional time will not necessarily boost learning and that tutoring must be structured appropriately before it will result in the intended effects. Another important finding is that both observations of tutoring and self-reports by tutors and learners may be quite misleading. Recall that observers and participants gave glowing reports of the Directed Tutoring treatment, which was later found ineffective. This suggests a need for careful monitoring of children's learning to ensure that apparent successes have some basis in reality.

On the other hand, it is not altogether clear which particular components of Programmed Tutoring were responsible for the impressive results obtained by this intervention. One candidate might be that a systematic sequence was followed, guaranteeing repetition and review of instructional content. Another possibility was that the content of tutoring was consistent with the

content of classroom instruction in that both followed the Ginn reading series. Teaching to mastery, which characterized Programmed Tutoring, may have been another factor responsible for this program's success, because children had to read each word and sentence correctly before they could proceed through the program. In contrast, the lessons in Directed Tutoring did not adhere to any particular sequence (so review was not guaranteed), the lessons were not closely tied to the classroom reading series, and children were not taught to mastery. Instead, one day they might play word bingo, the next day practice letters, and the next day interpret picture stories.

The point is that even this excellent experiment by Ellson et al., although providing important answers to certain questions, still leaves a number of other questions unresolved. With that caveat, we will turn to an examination of what research and experience suggest about structuring tutoring programs. Among the questions considered are those relating to content of instruction, measurement procedures, frequency and duration of tutoring, mastery requirements, program organizations, tutor training and supervision, and tutor selection and pairing with learners.

Highly Structured and Carefully Prescribed Lesson Formats

Research and practical experience have shown attention to format to be a critical feature. The tutors want to know what they will do each day. With an already established lesson, the tutors are able to begin teaching when they collect their materials. They do not need to ask the teacher, "What shall I do today?" As a teacher is always "busy," he is not able or willing to tell each tutor what to do daily. Tutors also want to feel independent and are embarrassed if they must repeatedly interrupt the teacher. Tutors want their tutees to see them as knowledgeable and skilled. This is more likely to occur if the tutor has a structured lesson in which he knows exactly what to do.

Structured lessons are also advantageous to the teacher; if the teacher does not have to explain each lesson daily to her tutors, she can have five to eight tutoring projects run simultaneously. If a particular lesson needs revision, she has the opportunity to spend time with that one lesson while the other tutoring pairs continue to work.

To establish a lesson format for tutoring the teacher must:

1. Select the skill or content for tutoring lessons.
2. Decide the outcome desired for the student.
3. Perform a task analysis.
4. Carefully sequence the tasks.
5. State the tasks in terms of learner performances that can be measured and evaluated.
6. Modify teaching tasks according to the sophistication of the tutors. For example, whereas third grade tutors might be expected to ask literal comprehension questions, fifth grade tutors might also work on sequencing tasks and probing for main ideas.

After tutoring has begun, changes in the lesson format may be needed to maximize individual student progress. In our experience, the basic format of the lesson remains the same for 90% of the students. What may change is the amount of time spent on practicing sounds, answering comprehension questions, and isolated word drill.

Appendices A, B, and C show structured lesson formats for reading, arithmetic, and spelling which could be implemented by tutors in grades three through six. These same basic formats have been used by parent volunteers, paraprofessionals, and peer tutors working in special education resource rooms and in regular classrooms.

Content of Instruction

Few systematic comparisons have been reported on the relative merits of different instructional contents. The work by Ellson et al. was closest to a study of different content, but in their research Directed and Programmed Tutoring conditions differed on other factors besides content--e.g., teaching to mastery. Yet Ellson et al. believed that the close correspondence between the content of Programmed Tutoring and the classroom reading series (Ginn) was a significant factor in the success of this intervention.

Although there is little scientific evidence to recommend correlating tutoring content with classroom content, there are some common sense notions which support such a practice. In the first place, the concepts of Normalization and Least Restrictive Environment impact on the design of special education programs that offer classroom support and remedial services. These concepts imply that services for children with learning problems should be designed in ways that assist the children to maintain their enrollment in regular class settings. When children with learning problems cannot keep up with their classmates, their teachers are inclined to dispatch them to another setting. Thus, the challenge for teachers is to help the children remain in the mainstream.

Since regular education teachers usually define program objectives in terms of their classroom curricula, they tend to judge children's competence in relation to success or failure in those materials. However, different curricula have been shown to vary greatly in their contents. The skills and words taught in one series may have very little overlap with those taught in another series. For example, Barnard and DeGracie (1976) found that the majority of words taught in any one major basal series during the first grade are not taught in other major series during first grade. Similar results were

reported by Jenkins and Pany (1978), who noted that certain reading series tended to correspond quite closely with particular achievement tests, but that other series did not, again indicating substantial differences in content between reading programs. Nor are curriculum differences confined to the teaching of specific vocabulary; they include comprehension skills as well. Armbruster, Stevens, and Rosenshine (1977) compared third grade workbooks from the Ginn, Economy, and Houghton-Mifflin series. They found that the relative emphasis on specific reading comprehension exercises (e.g., drawing conclusions and cloze) varied substantially across the three series, with emphasis given to different skills by any two of the series correlating on the average at only around .30.

This research suggests that remedial services based on the child's classroom curriculum will more likely improve performance in that curriculum. In contrast, services based on another curriculum, even if they effectively teach that curriculum's objectives, are less likely to teach the "right" skills--i.e., those the classroom teacher uses as his criterion.

In most situations, tutoring provides the opportunity for extra instruction, practice, and repetition or clarification of a concept which enables the child to succeed in the classroom curriculum. If tutoring does not help to improve the student's progress there may be a major design inadequacy in the curriculum. In school districts that use a whole-word reading curriculum it may be necessary to supplement reading instruction with a phonics based program. We know of teachers in one such district who trained cross-age tutors to teach from a phonics based curriculum (Distar I) while the teachers continued using the district curriculum. Another teacher in this school district taught a group of low performing third graders using a non-district, phonics based program (Corrective Reading) and used third grade peers to tutor in the district's adopted curriculum.

In most secondary programs tutoring is established to provide extra instruction in the content subjects such as history, biology, math, etc. Clearly, the content of tutoring lessons is the same as that of the regular curriculum. However, a tutoring program could also be used as a means to provide remedial instruction in the skills of reading, spelling, or study skills. For example, one high school teacher uses peer tutors to give remedial spelling instruction in her social studies class.

Teachers in "hands-on" classes such as shop, family living, and home economics can use skilled students as "in-class" tutors. This allows the teacher to mainstream some lower functioning students who cannot survive in a class of 28 students without extra help. In most cases, though, tutoring is provided in addition to regular, teacher-led instruction (supplementing this instruction, rather than supplanting it).

Mastery Learning

Closely related to the issue of instructional content is the degree to which a tutoring program approximates a mastery learning model. At issue is whether tutoring will be primarily activity- and process-centered, or learning- and mastery-centered. The ineffective Directed Tutoring condition in the Ellson et al. experiment was a classic example of an activity-oriented program. Tutors did not follow step-by-step procedures, presenting new material after old material was mastered. Rather, their focus was more on teaching than on learning. Student mastery of objectives did not dictate what tutors would teach in ensuing lessons. For example, one lesson might focus on consonant blends, the next lesson might feature a word lotto game, and the next be chiefly devoted to word meanings, regardless of the student's performance. In contrast, a mastery model assumes that any skills targeted

for instruction are of sufficient importance to require that students demonstrate mastery of them. In a mastery-based tutoring model, a skill (e.g., a set of letter sounds) is identified and instruction occurs every day on that same skill until students achieve mastery. Usually very precise learning criteria are established for every skill, guaranteeing that instruction will continue until the criteria are met.

Since no experiments have directly compared a teaching-to-mastery approach with an activity-centered approach, it would be unwarranted to draw a definitive conclusion on this issue and require adoption of a mastery model. The Ellson et al. study clearly favored the tutoring program which used a mastery model over the activity-oriented program, but contents also differed in these two programs. Based on our own survey of tutoring research, we have noted that successful programs have usually adopted a mastery orientation. In contrast, some tutoring programs failed to demonstrate any benefits for the tutored children and a number of these programs chose a more laissez-faire, activity-centered approach.

Although it has not been studied, the tutors' satisfaction with and sense of accomplishment from their jobs may be affected by the opportunity to observe their students actually master the instructional content. Presumably, one of the more potent intrinsic reinforcers connected with teaching is the sense of accomplishment that comes with having discernibly helped someone. Compared to an activity-centered model, learning is more readily observed in a mastery model because in the latter case students remain on a single task for several days until they can perform it.

In addition to the evidence gleaned from research, conventional wisdom suggests the importance of carefully selecting tutoring content and of guaranteeing that students master the content. It stands to reason that

programs which focus on the "wrong" content will not help students much, even if they succeed in teaching that content. Likewise, tutoring programs emphasizing "right" content will also fail, if they do not guarantee that children acquire and master this content.

Frequency and Duration of Tutoring Lessons

One of the first considerations in implementing a tutoring program is the scheduling of instructional sessions. How long should each session last and how many days per week should tutoring occur? Evidence from studies of academic engaged time and class size would suggest the more the better, at least up to the point of fatigue. However, other considerations will often dictate decisions about the frequency and duration of tutoring. For example, time available for tutoring may be greatly affected by schedule conflicts such as the whole-school grouping for reading and math, the numbers of periods available for secondary students to earn necessary credits for graduation, and competing opportunities for extra-curricular or service activities.

Only two studies have directly investigated the scheduling factor. One was the previously described Ellson et al. study in which two 15-minute daily sessions were compared with a single 15-minute session. Achievement results indicated that only the double sessions were effective. Even the highly successful Programmed Tutoring condition produced inconspicuous gains when it was scheduled only once daily for 15 minutes, suggesting that very short sessions may not be worth the effort. Frequency of tutoring was the subject of a study by Mayhall and Jenkins (1977), who compared short daily sessions with longer, twice-weekly sessions for learning disabled youngsters. Their findings indicated that children learned more under the daily schedule even though total tutoring time was equal for both conditions. Taken together, the

studies by Ellson et al. and Mayhall and Jenkins suggest that tutoring will be more effective when scheduled daily and for sessions that last approximately half an hour. It should be noted that both of these studies investigated "pull-out" type tutoring programs.

Regular education teachers who wish to incorporate tutoring into their own classrooms can schedule tutoring periods of briefer duration, and still obtain substantial effects. One study (Hall, Delquadri, Greenwood, and Thurston, 1982) found that a 15 minute tutoring period markedly improved the performance on weekly spelling tests for a group of low performing third graders. Tutoring was cast in a game format, and the class was divided into two teams, each attempting to earn points for correct spelling. Team members formed tutoring pairs. One member of each pair (the tutor) read spelling words to his/her partner who attempted to write each word. The tutor awarded 2 points if a word was spelled correctly. For mispelled words, the tutor told his/her partner how to correct the word and, once corrected, awarded 1 point. At the end of 5 minutes the members of the pair switched roles and resumed the game. Daily running totals were kept to determine the winning team, and new teams were formed each week. This simple program was extremely effective, even though it consumed only 15 minutes of classroom time including that required for the tutoring and point totaling.

Some writers have cautioned against daily sessions, speculating that tutors will grow bored and this will diminish the positive benefits of a tutoring program. Our experience does not support this view. Both tutors and the children tutored have maintained their enthusiasm over the course of 3 full years. Some antidotes to boredom and lassitude include an occasional change of tutor-learner pairings, scheduling reinforcing events for both tutors and learners, and making the job of tutoring prestigious in the school.

Other considerations, although not data-based, favor scheduling daily sessions of moderate length. One consideration is the classroom disruption produced by seating changes, movement, etc. and the additional teacher energies consumed in organizing this extra transition. To justify this, tutoring sessions should last long enough to have an effect and not just result in extra bother. A second consideration is especially pertinent in programs using cross-age tutors. Classroom teachers often prefer a fixed time, a regular (daily) period when their students will be out of the room for tutoring. This allows them to plan for and concentrate their efforts exclusively on the remaining students. In most secondary "out-of-class" tutoring programs, tutoring is a regularly established class period, scheduled daily unless a "weekly-variable" schedule is in effect.

It would be misleading to imply that for a tutoring program to be effective, it must be scheduled daily for half hour sessions. On the contrary, a number of successful tutoring programs have employed a less than daily schedule, or one with individual sessions lasting under 30 minutes. Our point is that when temporal factors were studied experimentally, results favored the moderate length, more continuous programs. This in combination with nuisance factors, such as interruption of classroom schedules and transition time, points to daily sessions of moderate length as the preferred organization, as long as other factors, such as availability of tutors, do not dictate otherwise.

Tutor Training

The last thing teachers want to create is an unpleasant and negative interpersonal experience for children. Researchers have observed that if left to their own, older children will occasionally show impatience, or boss and

ridicule younger children whom they are "helping" (Lippit, 1968); nor is such behavior limited to children. To prevent this situation, it is essential that tutors be trained in appropriate interpersonal behaviors which will result in a comfortable and satisfying experience for both members of the tutoring dyads.

In addition to the obvious need to provide tutors with directions pertaining to the content of instruction, conventional wisdom about good instructional practices suggests several behaviors which tutors should be trained to perform. For example, teachers and tutors should give clear directions, encourage and praise learners for their efforts, confirm correct responses, correct errors in a non-punitive fashion, and avoid overprompting. Interestingly, children who tutor appear not to engage in these behaviors spontaneously, according to a study by Niedermeyer (1970). Fifth and sixth grade students, who had received no specific tutor training, tended during tutoring sessions to confirm correct responses less than 50% of the time, rarely gave corrective feedback, and did not praise their tutees. Moreover, they did not engage in friendly, non-instructional conversation before or after the tutoring sessions. In contrast, tutors who had received training in these behaviors exhibited high rates of appropriate instructional and interpersonal behavior.

Research conducted on the teaching styles of children indicates substantial individual differences among youngsters in their delivery of positive and negative consequences during instruction. Feshbach (1976) has noted that children's tendency to provide positive or negative feedback to other children in the form of verbal and nonverbal cues is related to such factors as the tutor's socioeconomic class, race, mother's reinforcement style, and cognitive/achievement competence. Thus, while some children may approach the tutoring role with interpersonal and social skills, others will

need training and careful supervision, lest they produce negative learning conditions which interfere not only with effective transmission of information, but also with the learner's enjoyment, motivation, and self-evaluation.

These and several other tutoring skills--such as placing learners in an instructional sequence; procedures for teaching letter names, letter sounds, and sound blending; and record-keeping practices--were included in the tutor training program developed by Harrison (1969). To determine the value of this training, Harrison compared children taught by trained tutors with others taught by untrained tutors. His results strongly favored the group taught by trained tutors in that these children learned more, even though instructional time was equal for both groups. In a related study, Osguthorpe and Harrison (1976) concluded that role playing the tutoring skills during the training sessions was important to the success of the program. In this study, parent-tutors who had practiced the tutoring skills in role playing situations produced larger learning gains than did either parents who received no training or those who had read a manual and observed tutoring demonstrations.

What do these findings suggest for teachers? Although only a few studies have addressed the issue of tutor training directly, these have produced reasonably consistent findings in favor of training. Some general skills which cut across a number of instructional tasks include giving clear directions, confirming correct responses, applying non-punitive corrections, praising the tutee for appropriate behavior, and friendly conversing before and after the tutoring sessions. Efficiency considerations also suggest that tutors be trained in gathering and replacing their instructional materials, measuring and recording student performance, allocating time to specific tasks, and possibly monitoring or participating in post-tutoring games the student may have earned.

Other tutoring tasks such as teaching letter sounds, sound blending, arithmetic algorithms, specialized correction procedures, literal or inferential questioning, note taking, organizing notes around main ideas, etc. will require specific training if a tutor is assigned to teach them. The tutor training should match the lesson format developed by the tutor trainer. Moreover, it is probably wise to remember that training should not end once actual tutoring begins. As to the content of the continued training, careful supervision of the tutors will alert teachers to additional training needs. In an elementary or secondary setting, tutoring might occur four times per week with 1 day a week scheduled for continued training and/or conferencing with the tutor. If the tutees are also assigned to the same classroom as the tutors they can be included in the training on a voluntary basis. If the tutees choose not to participate they can work independently on other assignments.

We have included two prototypes of a tutor training program. The first (Appendix D) is a 2-week training program developed for third grade peer tutors. The lesson which the tutors will eventually teach consists of isolated word drill on new vocabulary introduced in a story, listening to a student orally read in his basal reader, and asking five to ten literal comprehension questions per story. Thus the tutor training program reflects this content.

The second tutor training program (Appendix E) is a 4-week course designed for secondary students. The tutors' lessons will be in a subject they are personally skilled in such as American government, life sciences, civics, family living, etc. Most of the tutoring will occur in a regularly scheduled "Tutor Class" with the tutor trainer while some, the "hands-on" subjects, will occur in the tutees' classroom. The skills needed for the secondary tutors

are organized around five main themes: Communication Skills, Task Analysis, Learning Environments, Instructional Techniques, and Study Skills. A detailed daily lesson plan for this course can be obtained by contacting the authors of this module.

Supervision

The need for proper supervision was demonstrated in a study by Mayhall, Jenkins, Chestnut, Rose, Shroeder, and Jordan (1975). The intent of this research was to examine both setting and supervisory factors in a cross-age tutoring program for learning disabled children. In the first experiment tutoring was conducted in the student's regular classrooms or in the special education resource room. In both settings minimal supervision was given by the teacher in charge. No differences were observed in the amount students learned in the different settings. The second experiment was identical to the first except that the resource room teacher actively monitored, encouraged, and guided the tutors. As in the first study, the classroom teacher taught a small group of classmates during the tutoring sessions, and thus provided minimal supervision of the tutors. The children who were taught by the closely supervised tutors learned more over the same period than did their counterparts in the classroom. Taken together, these findings suggest that supervision adds significantly to the effects of tutoring, and that the location of tutoring is less critical.

We also believe that active supervision helps to keep the tutors and the tutees interested in tutoring. There may be days when the teacher spends most of the lesson with one or two pairs of tutors. However, we recommend that the teacher "visit" every tutoring pair at least once during the session. It is also important that the teacher model the praise, enthusiasm, and interest

that she wants her tutors to demonstrate while teaching. An active role encourages the tutees to believe that the teacher is interested in their daily achievements and successes. Is the tutor always yawning or not paying attention? Is the tutee complaining or being unkind to the tutor? These signs of boredom, non-compliance, etc. should be dealt with early, and a positive, task oriented pattern should be reestablished.

Program Organizations

How can a school or a teacher organize the day to provide the tutor training and supervision necessary to have a successful tutoring program? Several organizations are possible. One organization for an elementary setting places a special education resource teacher or a remedial teacher in the program manager role. This individual might devote three or four periods daily to peer- or cross-age tutoring programs. The program manager would be responsible for recruiting tutors from various classrooms within the school, or, if geographically feasible, from a nearby secondary school. Ordinarily, special education and remedial teachers have sufficient flexibility in their schedules at the beginning of the school year to accomplish this task.

Another organizational framework for an elementary school places the school librarian in the program manager position. For example, the librarian might, in collaboration with several classroom teachers, organize and monitor tutoring for 10-15 low performing students drawn from grades one through six.

As an alternative to the program manager type of organization, regular elementary classroom teachers can organize a tutoring program within their own classrooms, or collaborate with one or more of their colleagues to develop a cross-classroom program. One period can be set aside daily for tutoring (e.g., the sustained silent reading time, the independent work time, or the

round robin reading time). A number of schedule variations are possible within these frameworks, ranging from daily tutoring to a combination of tutoring and teacher-led instruction on separate days.

In secondary schools several program organizations are also possible. The special education resource teacher might coordinate tutoring services. Special education teachers in secondary schools cannot reasonably be expected to instruct all referred students in all the various content classes (world government, American history, civics, life sciences, English). Rather than devoting several minutes to multiple content areas, the resource teacher might use this time to train and supervise tutors who would give supplemental instruction in content areas.

Similarly any of the remediation specialists, i.e., those in remedial reading, math, language arts, can organize their services on a tutoring model. Typically students' entry level skills vary widely in these classess, and individualized instruction by tutors may offer a solution to meeting the needs of a diverse student population.

Another organizational model for tutoring in secondary schools relies on former students as tutors. Teachers can recruit former students who are highly skilled in a subject and train them as tutors, giving them credit for assisting in the classroom. This organization may be especially helpful for teachers in "hands-on" classes like shop and home economics, but it is also feasible for content classes such as social studies, English and math.

Finally, a teaching position could be established specifically for managing a tutoring program. Hiring a teacher to be a tutor trainer is a somewhat more costly approach, but it enables a school to schedule tutoring every period during the day. Although it appears to be costly, it is actually a cost-effective means of serving 50 to 80 tutees and as many tutors when

compared to other models employed in remedial programs. If funding is not available for a teacher position, it may be possible for a teacher to recruit a parent volunteer who would assume responsibility for managing a tutoring program.

Measurement of Progress

When teachers personally conduct a lesson, they can easily observe how children are progressing. One obvious disadvantage of turning over instructional duties to another person is that teachers lose information about how their students are progressing.

One means of compensating for this information loss is to be present during tutoring and observe the teaching-learning activities. The previously mentioned study by Mayhall et al. indicated that such supervision can make an important difference in a program's success. However, as Ellson et al. noted, appearances are sometimes misleading, and what passes for effective tutoring under informal observations may not prove effective when actual learning measures are scrutinized.

The contribution of a data system to instructional decision making has been the subject of several experiments. In one study, Jenkins, Mayhall, Peschka, and Townsend (1974) compared learning when cross-age tutors measured children's performance either daily or not at all. The teachers who had access to the daily measures were better able to program adjustments which resulted in greater learning by the learning disabled students who were being tutored.

These findings support the common sense notion that decision making improves when people have access to better information, a proposition that is as true in classrooms as it is in government and industry. In addition to

their contribution to decision making, good data systems can have other beneficial effects as well. In tutoring programs it is especially important to keep both tutors and learners focused on particular outcomes. When students recognize that their progress toward specific objectives will be measured at the end of every day's lesson, they are less likely to drift off-task. In addition to this focusing function, performance measures also provide both partners in tutoring dyads with hard evidence on the fruits of their labor. Finally, the data gathered on tutoring outcomes can be useful to program organizers in justifying the continuation and expansion of this service.

In our experience, we have found that tutors can learn to collect daily performance data on each teaching objective. For example, within a reading lesson which includes instruction on letter sounds, isolated words, reading in context, and comprehension questions, the tutor will measure each element separately and display the results visually on a chart. By inspecting these charted performances, teachers determine how each child is progressing on each task, when instructional procedures need to be changed, and when the child is ready for a new task. Tutors are usually enthusiastic about measuring and charting performance; it not only provides evidence of their own effectiveness, but also constitutes one of the "special teaching skills" that makes the role of tutor distinctive.

In creating a measurement system that will be useful in evaluating the student's progress, it is imperative that the teaching tasks and learner outcomes be as objective as possible to help ensure that the behavior is a measureable one. We have included some samples of measurement instruments used for reading tutoring in elementary settings.

Simple monitoring. Third grade peer tutors have used this data sheet. The classroom teacher establishes a rule that a tutee must make two or fewer errors to continue. Tutors ask five questions at the end of a story and tutees need to demonstrate 80% mastery. The teacher is able to judge whether material is getting more difficult, if word drill is needed, if more time should be spent on comprehension, etc. On the following pages are examples of two types of data sheets which a teacher might employ.
This data sheet enables a teacher to know what particular words were missed and to make decisions about rereading particularly difficult stories.

Daily performance chart. The daily performance chart monitors the student's functioning on those behaviors that are directly taught. On the following page is an example of a daily performance chart showing aspects of a students reading performances. Using the bands on this performance chart the teacher monitors Sterling's reading accuracy (top band), oral reading rate (second band), letter sound accuracy (third band) and comprehension accuracy (fourth band). The reading accuracy and rate data are based on a 100-word passage drawn from the story on which Sterling is working. If Sterling reads a sample with less than 95% accuracy, he must work on that story another day. The comprehension data are based on Sterling's answers to several questions covering the story's content. He must achieve at least 80% comprehension of each story. The chart also tells his tutor when to introduce additional letter sounds within a level or to remain on those he worked on the previous day.

Sterling's chart shows that on September 18 his reading accuracy on the first story in Level 8, Allyn and Bacon, was 96%, his oral rate was 45 words per minute, his letter sound accuracy (Level 6) was 100%, and his comprehension was 100%.

Date Sheet A

FIRST 100 SIGHT WORDS

STUDENT: JASON

TUTOR: CASSIE

BOOK: RIDING RAINBOW

ERRORS ALLOWED: 2/PAGE

DATE	STORY NAME	PAGE	ERROR TALLY	IMPORTANT ERROR WORDS
5/12	Hummingbird	23	𝍸 I	COAST Leaping TOTEM SALMON
	"	23	IIII	SALMON COAST
	"	23	I	
	"	24	II	
	"	25	0	
	"	26	II	UNUSUAL
5/13	"	27	III	Swung by
	"	27	0	
		29	𝍸 II	SAID HARDER PROUDLY FORGET
		28	III	

READING RECORD

STUDENT: Donald

TUTOR: JESSICA

BOOK: RIDING RAINBOWS

DATE	PAGE NO.	ERROR TALLY	COMPREHENSION +=CORRECT -=ERROR	COMMENTS
4-24	5	IIII		
	8	II		
	9	III		
	9	II		
	10	0		
	11	0	+++0+ 80%	WORKED HARD!
4-25	12	III		
	12	I		
	13	I		
	13	III		
	13	I	+++++ 100%	BIG IMPROVEMENT!

Data Sheet B

SEMESTER/YEAR: F/79 CL. TEACHER: Henry SP. TEACHER: Jenkins TUTOR: Lisa

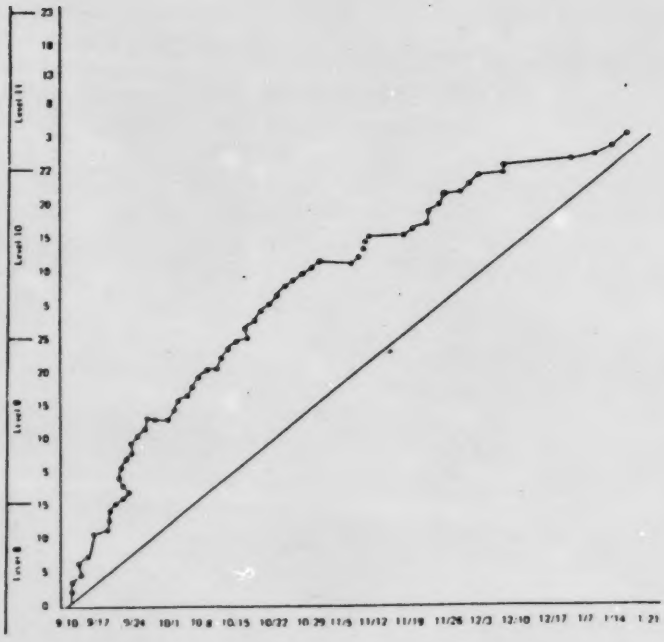

FIGURE 5. Daily Progress In Curriculum

Daily Performance Chart C

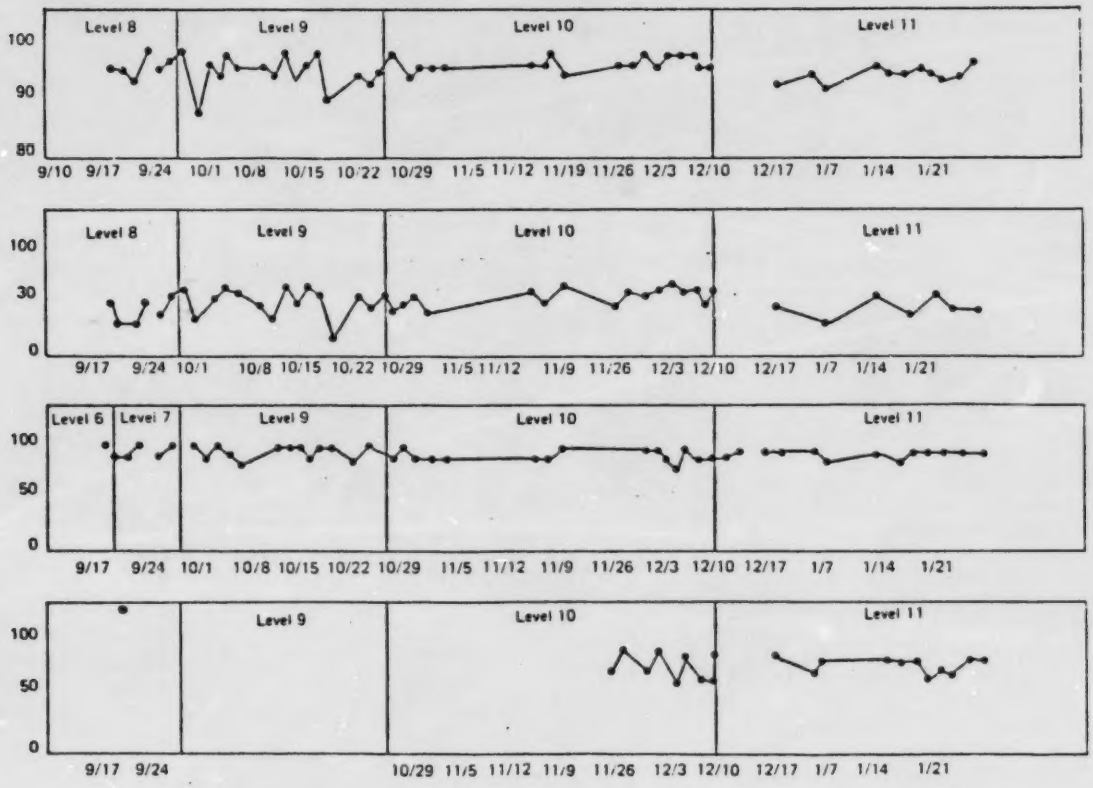

FIGURE 6. Daily Performance Chart

Daily progress chart. This second type of chart is tied closely to the daily performance chart. It reflects the student's rate of progress through the reading curriculum in terms of mastering stories (95% accuracy and 80% comprehension) within the reading levels. For example, the illustration on the following page reveals that on September 18 Sterling mastered the first three stories in Level 8, Allyn and Bacon. The solid diagonal line on Sterling's chart reflects the semester goal set for him--i.e., mastery of Level 8 through story 3 of Level 11. Were Sterling to fall below this line the teacher would need to modify his program, perhaps scheduling more tutoring or changing some aspect of the lesson. Moreover, by referring back to his daily performance chart the teacher can determine if the problem is related to reading accuracy or comprehension.

The tutors maintain both the performance and progress charts for their students. They share these data with their teacher each day.

Selecting and Pairing Tutors With Learners

Since almost no research has addressed this issue, teachers have had little choice but to rely on their intuition both in selecting tutors and in pairing tutors with learners. With availability dictating the pool of potential tutors, it has not always been possible for teachers to follow their natural preference for older, academically competent student tutors; nevertheless, in many cases teachers have been able to design high quality programs using children as young as 7, 8, and 9. As a general rule, however, older, more able students are the first choice because they are easier to train, require less supervision, and are better able to manage discipline problems. Academically capable fifth and sixth grade students make ideal tutors; they are often available because they have little trouble meeting the

Daily Performance Chart D

challenges at their grade levels and consequently can complete their assignments independently. Often, they are willing to buckle down and use their classroom study time efficiently to complete their work or sometimes work on their classroom assignments outside of school time so that they can qualify as tutors. Their classroom teachers may also perceive tutoring positively. Apart from the fact that tutoring is a worthwhile activity which will help the children grow in social maturity, the classroom teacher can take advantage of the students' desire to tutor and use it as a means of motivating them to keep up their assigned work. Moreover, during the period when the student tutors are gone from the classroom, the teachers can capitalize on the reduced class size and concentrate their efforts on the less able students.

There is more to consider than age, grade, and ability levels, however. The crucial factors in tutor selection relate to the tutors' personal characteristics. Program organizers normally seek children who are dependable, responsible, sensitive, and caring, or children who appear likely to develop these traits. Classroom teachers are usually able to identify at least three to five children in their classes who possess such traits along with the requisite academic competence, with time available in their daily schedules to participate in a tutoring program.

In pairing tutors with learners, teachers need to decide about such factors as age differential between members of the dyad along with racial and sexual composition of the pairs. Only sparse research data are available to help teachers with these decisions and none of these data would qualify as definitive. For example, while children prefer to be tutored by and to tutor same-sex partners, there is no evidence to suggest that either cross-sex or same-sex pairings are more effective. The single study on this topic (Klentschy, 1972) found no relation between achievement gains and sex

pairings. With respect to race, Witte (1972) found that various racial pairings had no discernible influence on learning, but that interracial dyads did positively influence cross-racial interaction and acceptance. Other research has not found attitudinal change resulting from interracial pairings (McMonagle, 1972). Common sense, however, favors both interracial as well as cross-socioeconomic class tutoring as a means of producing a positively structured contact between children of different backgrounds. The same common sense cautions against uniformly placing minority and lower SES children into the learner role while reserving tutor status to the middle class, white children. Children from all backgrounds can benefit from functioning in a human service, helping program. In addition to the interracial contacts within the tutoring dyads, a certain amount of camaraderie and esprit de corps can develop within the tutor group itself, thereby enhancing the relations among children from different economic and racial backgrounds who have come to share common interests, responsibilities, and problems associated with teaching.

Age pairings of tutors and learners have been investigated in two studies (Linton, 1973; Thomas, 1972). Both reported that older tutors were more effective than younger ones, but these findings should not be widely generalized. In one study, twelfth graders produced larger math achievement gains than did eighth or tenth graders when tutoring eighth grade students. In the other, college students compared with sixth grade tutors produced larger vocabulary growth in second grade learners but no differences in reading comprehension and oral reading measures. The dynamics of peer- vs. cross-age pairings are not well understood. Intuitively, one might expect children to accept instruction from an older student more readily as this situation more closely approximates the classical adult-child instructional arrangement. In

contrast, instruction from a peer might invite negative self-evaluations with respect to status and competence. An age differential may also give the tutor an upper hand in matters of discipline. In contrast, teachers have organized highly effective within-class tutoring programs which featured same-age pairings.

Considerations In Implementing A Tutoring Program

Who's in Charge?

The responsibility for providing every child with an appropriate instructional program belongs to the teacher. This fact does not change when teachers implement a cross-age tutoring program. The teacher is still the person in charge. She establishes the instructional goals, delineates objectives, designs the lessons, chooses materials, and makes adjustments in instructional conditions as they are needed. By establishing a tutoring program the teacher can intensify instructional services, providing more practice and individual attention to the children he serves, but he cannot justifiably turn over his professional responsibilities to the tutors. While a tutoring program requires that the teacher exchange some direct teaching duties for some managerial duties, the major instructional decisions (who to teach, what to teach, and how to teach) are still the teacher's. Below is a brief outline of some of the important activities for teachers who implement a cross-age tutoring program.

Getting Started

In beginning a tutoring program a good rule to follow is to start small. The teacher should identify four to six students who would seem to be good candidates for tutorial instruction, ones who need intensified services in the form of additional practice, but who do not have serious behavior management problems. The next step is to assess the students' mastery of curriculum objectives, identifying what they need to learn next.

Designing Lessons and a Measurement System

Tutors are not skilled diagnosticians, curriculum developers, or experts in designing instruction. These are teacher competencies and responsibilities. Research evidence and personal experience lead us to recommend that the content of tutoring lessons be closely aligned with the learner's regular classroom programs. For example, lessons can be structured which use the same reading and spelling curriculum that is used in the classroom. A typical beginning reading lesson conducted by a tutor would involve several minutes' work on letter sounds, several minutes' instruction on new words, with the remainder of the period devoted to oral reading. For an older student, the teacher might replace the letter sound and new word practice with word meaning instruction, error word drill following the oral reading, and answering comprehension questions. The basic structure of the lessons changes little from day to day, but the content, which follows the classroom reading series, is adjusted in accordance with the learner's demonstration of mastery. Thus, the tutors do not have to invent each day's lessons anew; rather, they follow an established lesson format.

The teacher needs to develop a procedure for measuring students' performance on each aspect of reading. The tutors can measure and chart progress daily as their students gain in competence, and the teacher can employ these data in making instructional modifications for particular students. For example, the teacher may note that a story needs to be repeated, that letter sounds are being introduced too slowly, that vocabulary needs to be overlearned for purposes of retention, or that a change in incentives may be required to motivate the student to work more diligently.

Designing and Conducting Tutor Training

The specific content of training programs to prepare children for tutoring will vary with the subject area in which they tutor, the kind of performance measures which the program employs, and the types of children to be tutored. Nevertheless, training will usually address these general topics: information about the program and the tutors' responsibilities, measurement procedures, lesson structure and teaching procedures, and personal behavior.

Program and responsibilities. Trainees are given information on the purpose of the program and the responsibilities that come with being a tutor. Responsibilities pertaining to tutoring itself include the regular time commitment, punctuality, confidentiality, and positive regard for the learner. The tutor's own classroom responsibilities include maintaining their standard quality of work on their regular assignments and keeping informed about and making up any work they missed while out of the classroom.

Measurement. Since a program's success depends largely on the teacher's ability to make accurate instructional decisions, considerable training time is devoted to teaching the tutors a data system. Trainees learn what performance data they will collect (e.g., percent correct, rate of math facts,

oral reading, and spelling) and the procedures for collecting these data (e.g., random samples of math facts from specified domains, preselected passages, and structured spelling lists). Trainees may need to learn how to employ stopwatches and pocket calculators in order to compute summary statistics so they can transcribe performance data onto record sheets and charts. Or they may simply need to be shown how to count and record errors or pages read, depending upon the nature of the lessons.

Lesson structure and teaching procedures. Depending upon the tutors' academic specialization (e.g., reading or math), trainees learn how to teach specific skills (e.g., sound identification, sound blending, reading out loud, one-to-one correspondence, adding, subtracting), appropriate use of prompts, and error correction procedures. They also learn the various components of a lesson and the amount of time allocated to each component.

Training procedures for preparing tutors on these tasks extend beyond mere telling. Teachers can demonstrate an entire lesson while trainees observe the teacher as she models appropriate tutor-student interactions. Teachers can also model lesson components or small-scale instructional episodes, and follow these with role playing opportunities for the trainees who exchange tutor and student roles with each other. Finally, tutors can be introduced to their jobs by allowing them to assume responsibility for parts of lessons, and--as they become comfortable--allowing them gradually to assume more responsibility.

Personal behavior. In the category of interpersonal skills, trainees learn how to display positive verbal and non-verbal behavior, including active listening, conversing, and praising good effort. They learn not to show impatience, annoyance, or disappointment. They learn that errors are merely a signal for more teaching, not for punishment and disapproval. They learn to approve and give attention to appropriate student behaviors and to ignore and redirect off-task behaviors.

As we stated earlier, different tutoring programs will vary in their specific training content because they differ on important features such as their instructional focus and measurement procedures. Thus, it would be difficult to design and disseminate tutor training procedures and content for general consumption. The topics described above do, however, represent categories of information and skills which a program manager will likely address.

Beginning Tutoring

By the time the tutors have completed their training regimen they are eager to get started with their students. As is the case in undertaking any new job, there are ample opportunities for mistakes even with the best of training. Thus, during the first few solo tutoring sessions, the teacher will need to monitor the lesson carefully and conduct post-tutoring debriefing sessions. For this reason, it is wise to stagger the beginning of tutoring with just a few pairs starting on a given day. As tutors grow more accustomed to their roles, monitoring and debriefing sessions can be reduced, but never completely dropped. the teacher can use the tutoring period to refine tutors' skills, to observe and analyze learning and instructional problems for students whose progress is slow, and possibly to introduce new tutors into the program.

Maintaining Tutors' Involvement and Interest

Like teaching, tutoring is not an easy job. It is one which can try a person's patience, tolerance, and interpersonal skills. There are good days and bad days. But like teaching, tutoring produces many natural rewards for the instructor, the most significant of which is the change in skill and

competence of the learner. The progress charts which record the learner's growth over time amplify the products of tutoring. The charts and what they represent not only remind the tutors of their accomplishments and the internal satisfaction that accompanies them; they also promote recognition from the learner, the program manager, classroom teachers, and parents.

Tutors need these and other reinforcers to persist in their jobs, since there are always competing contingencies which vie for their time. Keeping tutors motivated is a challenge to the tutor trainer. In our experience, the most important reinforcer is personal attention from the teacher--time spent with tutors in discussing the tutoring projects as well as other aspects of their school and personal lives has considerable influence on tutors' interest and continued participation in the program. Another means of maintaining tutors' motivation is by drawing attention to their accomplishments with quarterly reports, through informal discussion with their parents, teachers, and principal, school or local newspaper articles, and comments and remarks that remind them of the importance of their contribution to the children they teach. A third means of maintaining motivation is through systematic scheduling of reinforcing events such as tutor luncheons, tutor parties, tutor awards, letters of thanks from principals of tutees, daily material rewards such as candy or stickers, allowing the tutoring room to be a place to meet before school officially opens for students, academic grades or credits for tutoring, and personal letters of recommendation for jobs, camps, or future schooling. This combination of reinforcers ranging from intrinsic to extrinsic motivators has proven successful in holding the interest and involvement of cross-age tutors for as many as 3 consecutive years of service.

Children As Teachers: Benefits To Tutors

Even if tutoring has been demonstrated to benefit the children tutored, that clearly is only half of the picture. In programs employing a peer or cross-age model where children serve as tutors, it is particularly important to consider the consequences of this experience for the tutors as well as the learners. Obviously, the time that children spend tutoring is time subtracted from some other activity. Depending upon the other activity, and its importance to children's growth and enjoyment, tutoring creates the potential for negative effects on the tutor. For example, cross-age tutors who miss classroom time scheduled for essential teacher-led instruction or for private study may suffer academically for the same reasons that children who receive additional instruction from tutors will benefit academically. A corollary concern is that more able students who serve as tutors are being exploited by someone--the less able students whom they tutor, the teachers who have not done their jobs, or the school administrators who seek easy solutions to staffing problems. Parents, teachers, and principals have occasionally expressed these or similar concerns. Others have taken an exactly opposite view, suggesting that tutoring will help children both in academic, attitudinal, and socialization areas. To shed light on these opposing ideas, researchers have examined both the cognitive and non-cognitive effects of having served as a tutor. While the research evidence is less than definitive, it does allow parents and educators to make more intelligent judgments concerning the reality base of the hypothesized positive and negative outcomes of tutoring.

Before turning to that research, a more philosophical, less empirical case might be built for establishing cross-age helping relationships in the schools. That is, the value of tutoring may extend beyond the more traditional self-centered curriculum goals of achievement and skills acquisition. Coleman (1974), in the report of the Panel on Youth of the President's Science Advisory Committee, proposed that the environment of young people should provide not only an opportunity for reaching these traditional school goals, but also an opportunity for gaining "social maturity" through assuming responsibilities that affect the lives of others. "Only with the experience of such responsibilities can youth move toward the mutually responsible and mutually rewarding involvement with others that constitutes social maturity" (Coleman, quoted in Allen, 1976).

Society holds to an ideal that children will grow into responsible citizens who care for and help others. Yet inexplicably, within its major institution for socializing the young, the school, it rarely permits children to assume and practice these responsibilities. Nor does it systematically supervise or actively shape effective helping behaviors. Thus, were education to seriously accept as one of its goals the development of social maturity, it might include more opportunities and experiences that would facilitate attainment of this goal.

However, the development of social maturity is a long-range goal, at best, and one which some would argue is secondary to those traditional goals that more closely reflect the cultural imperatives and personal growth. What of the more immediate, consensual goals of education and the impact of tutoring on these? Specifically, when students serve as tutors are they hindered or helped in measurable ways?

The meta-analysis by Cohen et al. (1982) showed that tutors gained a better understanding of the subject matter they tutored in, and student attitudes towards the subject matter were more positive in classrooms with tutoring programs.

At least four plausible explanations could be advanced to account for achievement gains by tutors. First, the experience of tutoring may serve as an occasion for students to acquire new information that they might not have encountered without training. For example, in helping a student with a reading lesson, tutors might be exposed to and assimilate information about the creation of fossils, the age and formation of our galaxy, the culture of the Navajos, the background and accomplishments of a historical figure, or how two children resolved a conflict. In tutor training sessions they may learn psychological concepts such as differential reinforcement, punishment, modeling, fading and shaping, and perhaps how these concepts apply to situations beyond those found in formal teaching arrangements. Second, the act of tutoring may be an occasion for students to review and relearn information or skills that they have either forgotten or on which their proficiency has diminished. For example, tutoring content that includes vocabulary meanings, spelling words, math operations, and automatic math facts may pose opportunities for relearning or for upgrading previously acquired skills. Third, tutors may become more conscientious about their own classroom work because they do not want to risk losing their tutoring privileges. They may even become more sensitive and reflective about their own behavior in their role of student once they have experienced the role of teacher. Fourth, the opportunity to tutor may result in general attitudinal changes which indirectly influence the students' involvement in learning. For example, a successful experience in the role of tutor might raise some students'

self-confidence, prompting a shift in their appraisal of themselves as learners, and result in increased approach behaviors towards learning tasks from which they might once have been deterred. Or, possibly, an enjoyable experience in tutoring might brighten a child's outlook and participation in school. It is a common event for classroom teachers and parents to spontaneously remark about the new enthusiasm their children have toward school after they have undertaken tutoring responsibilities.

Children who tutor appear in some cases to derive cognitive benefits from this addition to their school experience. If one were to discount the studies which show positive cognitive effects for tutors, then the experience of tutoring would appear to have, at worst, neutral effects on these students.

Non-Cognitive Benefits for Tutors

The list of hypothesized non-cognitive benefits to students who serve as tutors is quite long. Among the alleged benefits are increased altruism, empathy, self-respect, ego strength, self-esteem, self-confidence, responsibility, sense of self-accomplishment, maturity, seriousness of purpose, understanding of individual difference, improved attitudes, improved attitudes toward school and adults, a new awareness about learning and studying, and the breaking down of racial prejudice (Gartner Kohler, & Reissman, 1971), and the development of social skills (Argyle, 1976). Although these are normally not listed among the primary goals of schooling along with increased knowledge and skills, many of them would qualify as subsidiary goals in the sense that they may help students attain the primary goals.

By stepping into the teacher's shoes, a child qualifies for several desirable consequences including prestige in the eyes of peers, considerable attention and reinforcement from adults, and respect from the student who is tutored. Moreover, when tutors recognize that their younger students may imitate, emulate, and identify with them, they may even feel compelled to exhibit more socially desirable and appropriate behavior.

Tutors may also develop social and role taking skills. If social skills such as active listening, maintaining involvement, detecting and responding appropriately to another's mood, emotion, temperament, and level of understanding, etc., are learned as physical skills through practice and modeling, then tutoring may contribute to the tutors' development by providing an opportunity for supervised practice.

Placing Tutoring in Perspective

The major advantage of tutoring programs is their ability to increase academic engaged time, and to provide more repetition and practice on important academic tasks. Of course, there are a number of factors besides academic engaged time and repetition that influence children's achievement. Consider the following: selecting skills with high transfer value; breaking tasks into learnable components; sequencing skills to facilitate acquisition; placing learners at appropriate points within an instructional sequence; programming reviews to enhance retention; designing teaching formats that allow for clear stimulus presentation, ensure learner retention, and provide adequate response opportunities; and arranging consequences that induce high levels of motivation. If any of these are ignored, achievement will be negatively affected, whether the learner is in a general classroom or tutoring

program. Whereas careful planning in regard to the above items will pay dividends in any instructional setting, it is also true that the efficacy of educational programs can be considerably enhanced by ensuring that individual learners are given sufficient instructional minutes and adequate response opportunities for them to master essential academic skills. Tutoring programs are uniquely suited to these requirements.

References

Allen, V. L. (Ed.). Children as teachers: Theory and research on tutoring. New York: Academic Press, 1976.

Argyle, M. Social skills theory. In V. Allen (Ed.), Children as teachers: Theory and research on tutoring. New York: Academic Press, 1976.

Armbruster, B. B., Stevens, R. J., & Rosenshine, B. Analyzing content coverage and emphasis: A study of three curricula and two tests. Technical Report No. 26. Urbana-Champaign: Center for the Study of Reading, University of Illinois, 1977.

Armstrong, S. B., Conlon, M. F., Pierson, P. M., & Stahlbrand, K. The cost effectiveness of peer and cross-age tutoring. Paper presented at the Annual Meeting of The Council for Exceptional Children, Dallas, Texas, 1979.

Barnard, D. P., & DeGracie, J. Vocabulary analysis of new primary reading series. The Reading Teacher, 1976, 177-180.

Becker, W. C., & Carnine, D. W. Direct instruction--A behavior theory model for comprehensive educational intervention with the disadvantaged. Paper presented at the 8th Symposium on Behavior Modification, Caracas, Venezuela, 1978.

Becker, W., & Englemann, S. The direct instruction model. In R. Rhine (Ed.), Encouraging change in America's schools: A decade of experimentation. New York: Academic Press, 1978.

Berliner, D. C., Fisher, C. W., Filby, N., & Marlieve, R. Proposal for Phase III of beginning teacher evaluation study. San Francisco: Far West Laboratory for Educational Research and Development, 1976.

Carnine, D., & Silbert, J. Direct instruction reading. Columbus, OH: Charles E. Merrill, 1979.

Cohen, P. A., Kulik, J. A., & Kulik, C. C. Educational outcomes of tutoring. American Education Research Journal, 1982, 19, 237-248.

Coleman, J. S. Youth: Translation to adulthood. Chicago: University of Chicago Press, 1974.

Ellson, D. G., Harris, P., & Barber, L. A. A field test of programmed and directed tutoring. Reading Research Quarterly, 1968, 3, 307-367.

Feshbach, N. D. Teaching styles in young children: Implications for peer tutoring. In V. L. Allen (Ed.), Children as teachers: Theory and research on tutoring. New York: Academic Press, 1976.

Gartner, A., Kohler, M., & Reissman, F. Children teach children: Learning by teaching. New York: Harper & Row, 1971.

Harrison, G. V. The effects of trained and untrained student tutors on the criterion performance of disadvantaged first graders. Paper presented at the meeting of the American Education Research Association, Los Angeles, March, 1969.

Jenkins, J. R., Mayhall, W. F., Peschka, C., & Jenkins, L. M. Comparing small group and tutorial instruction in resource rooms. Exceptional Children, 1974, 40, 245-250.

Jenkins, J. R., Mayhall, W. F., Peschka, C., & Townsend, V. Using direct and daily measures to influence learning. Journal of Learning Disabilities, 1974, 7, 14-17.

Jenkins, J. R., & Pany, D. Standardized achievement tests: How useful for special education? Exceptional Children, 1978, 44, 448-453.

Klentschy, M. P. The effect of sixth-grade tutors on the word attack attainment of second graders. Paper presented at the annual meeting of the California Research Association, San Jose, November, 1972.

Linton, T., Jr. The effects of grade displacement between student tutors and students tutored. Dissertation Abstracts International, 1973, 33(8-A), 4091.

Lippitt, P. Cross-age helpers. National Educational Association Journal, March, 1968, 24-26.

Mayhall, W. F., & Jenkins, J. R. Scheduling daily or less-than-daily instruction: Implications for resource programs. Journal of Learning Disabilities, 1977, 10(3), 159-163.

Mayhall, W. R., Jenkins, J. R., Chestnut, N., Rose, F., Schroeder, K., & Jordan, B. Supervision and site of instruction as factors in tutorial programs. Exceptional Children, 1975, 42, 151-154.

McKenzie, H. Special education and consulting teachers. In Rev. Clark, D. R. Evans & L. A. Hamerlynck (Eds.), Implementing behavioral programs for schools and clinics. Champaign, IL: Research Press, 1972.

McMonagle, L. An investigation of attitude change in college tutors toward black children as a function of required tutoring. Dissertation Abstracts International, 1972, 33(4-A), 1521.

Niedermeyer, F. C. Effects of training on the instructional behaviors of student tutors. The Journal of Educational Research, 1970, 64, 119, 123.

Osguthorpe, R. T., & Harrison, G. V. Training parents in a personalized system of reading instruction. Improving Human Performance Quarterly, 1976, 5, 2, 62-68.

Rosenshine, B. V., & Berliner, D. C. Academic engaged time. British Journal of Teacher Education, 1978, 4, 3-16.

Stallings, J. A., & Kaskowitz, D. Follow-through classroom observation evaluation, 1972-3. Stanford, CA: Stanford Center for Research and Development in Teaching, 1974.

Thomas, J. L. Are elementary tutors as effective as older tutors in promoting reading gains? Dissertation Abstracts International, 1972, 32(7-A), 3580.

Witte, P. H. The effects of group reward structure on interracial acceptance, peer tutoring and academic performance. Dissertation Abstracts International, 1972, 32(9-A), 5367.

Recommended Readings

Cohen, P. A., Kulik, J. A., & Kulik, C. C. Educational outcomes of tutoring. American Education Research Journal, 1982, 19, 237-248.

Jenkins, J. R., & Jenkins, L.M. Cross age and peer tutoring: Help for children with learning problems. Reston, VA: Council for Exceptional Children, 1981.

Jenkins, J., Mayhall, W., Peschka, C., & Jenkins, L. Comparing small group and tutorial instruction in resource rooms. Exceptional Children, 1974, 40, 245-250.

Neidermeyer, F. C. The effects of training on the instructional behavior of student tutors. Journal of Educational Research, 1970, 64, 119-123.

Sprinthall, N. A. Peer and cross-age teaching: Promoting social and psychological development in mainstream classes.

Appendix A

Sample Structured Lesson Format: Reading

Task	Procedures
1. Letter Sounds	
Organize letter sounds taught in specific lesson, new sounds first, review sounds later arrange all letter sounds taught in a level (primer, 1st, etc.) create a visual display for tutors to use.	ou ou oo tion or ur ar th ar a a sion ch sh 1. Student orally says each sound to tutor 2. Error correction: tutor says sound, student repeats and then starts the list or row again 3. Criterion: all sounds in list said correctly within 2 seconds
2. Word Recognition	
Organize words introduced into word families, if possible, and create a visual display for tutors to use.	our soup stir where out group first were loud burn house hurt found shout 1. Student orally decodes list of words to tutor. 2. Error Correction: (a) tutor points out phonetic elements and has student orally say each part, then blend them together; (b) if student is unable to say parts, tutor models. Student repeats this process, blends together to say it fast. Start the list again. 3. Criterion: All lists said correctly with 100% accuracy.
3. Oral Reading	1. Student orally reads story to tutor. 2. Error Correction: Tutor "sounds out" word, pointing to phonetic elements, and then says word fast. Student repeats these steps and

then rereads the sentence (see Tutor Training section of this module for more detailed instructions).

3. Criterion:
   (a) Beginning reading students should read each page until the page is perfect. Beginning readers can be recycled through preprimers and primers several times using this criterion.
   (b) Second or third grade readers can be allowed 2-5 errors per page without rereading each page.
   (c) With 4th grade and above, use 95% accuracy as a criterion.

4. Oral Comprehension Questions

Organize questions for each story. Teacher can label question types (e.g., literal, main idea, etc.) so tutors can be told which question type(s) to ask students. Most students are asked literal questions.

1. Tutor orally asks student comprehension questions at end of each story. Can also have them asked page-by-page.

2. Error Correction:
   Tutor locates page or paragraph where answer is located.
   Tutor repeats questions
   Student silently rereads until the answer is located.

3. Criterion: 80% accuracy.
   If accuracy is below this level, student rereads story. Tutor may preview questions before story reading if necessary.

Appendix B

Sample Structured Lesson Format: Math

Task	Procedures
Developing proficiency on addition and subtraction facts	1. Student writes answers on a 50 item fact sheet (see sample sheet below) 2. Tutor checks work. 3. Student corrects errors and reviews these with tutor. 4. Tutor gives one minute timing on a new 50-item sheet. 5. Tutor charts daily performance. 6. Tutor reinforces student and shows teacher the daily performance. 7. Goal: 50 facts per minute.
Developing proficiency on multiplication facts (Note: Teacher would select addition, subtraction, multiplication or division as a lesson component, depending upon the learner's need.)	1. Student writes out designated portion of multiplication table(s) in sequence. 2. Tutor checks. 3. Student orally says times facts in sequence to tutor. 4. Error correction: Go back to a known fact: For example, the student misses 6x7 in the following sequence (a) 6 x 5 = 30 6 x 6 = 36 6 x 7 = 46, X (b) Tutor says, "no 6 x 7 is 42, say it." (c) Tutor says, "Start again with 6 x 5." 5. Student counts by a number, e.g., by 2's, 3's, etc. for whatever set of facts is being studied. For example, "Count by 3s"--3, 6, 9, 12, etc. 6. Tutor gives a one-minute timing for student to write answer to each set of facts. 7. Tutor charts daily performances. 8. Tutor reinforces student and then shows teacher the math charts. 9. Goal: 50 per minute for each table.
Learn Process of Addition, Subtraction, Multiplication, and/or Division	1. Tutor models two problems or has student perform problems with oral directions from tutor.

2. Student completes worksheet and tutor monitors as the student works. Alternatively, student does work and tutor grades later.
3. Tutor circles problem that student could not perform independently or got incorrect.
4. Tutor helps student correct errors.
5. Tutor charts performances.
6. Criterion: Two or three days at 90-100% on target skill.

Math Worksheet

Note that the following worksheet is organized so that tutors can easily compute % correct on the class or problems being taught as well as the review problems. It is important to have a systematic way of reviewing material as the teacher is not personally instructing the child. If math materials were organized in a similar format, the teacher could run several math projects simultaneously.

Student_____ Date:_____

Tutor_____ % New_____

% Review_____

Model Problems

(Tutor does these with the student.)

907	403
-48	-126

Five Problems of the new Class:

(Student does independently. Tutor computes % correct and teacher sets criterion for mastery.)

301	708	307	202	702
- 42	-419	-238	- 98	316

Ten Review Problems:

(Student does independently and tutor computes % correct.)

76	778	72	226	44
+42	- 88	+39	-142	11
				+31
345	29	575	879	12
- 97	85	+345	-251	14
	+70			+87

Fact Rate Sheet (Sample)

Addition 0-9

Correct _____

Errors _____

Name _____

Date _____

Tutor _____

2 +7	1 +8	6 +3	1 +1	3 +2	5 +0	4 +3	4 +5	2 +0	7 +2
4 +3	3 +1	8 +1	3 +6	3 +3	6 +2	2 +1	4 +2	5 +4	4 +0
5 +2	1 +9	4 +4	5 +1	4 +2	2 +6	7 +1	3 +5	1 +0	1 +4
4 +0	2 +5	6 +0	5 +4	4 +1	4 +4	3 +0	4 +1	6 +1	3 +2
3 +3	1 +5	4 +2	6 +2	2 +4	7 +0	3 +5	1 +3	6 +3	3 +6
4 +4	1 +6	3 +4	3 +3	5 +3	2 +2	3 +2	5 +2	1 +1	2 +2

Appendix C

Sample Structured Lesson Format: Spelling

Task	Procedures
1. Organize words with phonetic similarity. Create a visual display for tutors to use.	1. tall, small, hall, wall; salt, false, haul, cause; law, jaw, yawn, shawl, straw, lawn
2. Read words	1. Student orally reads list of words to tutor. 2. Error correction: Tutor sounds out word, student repeats and then starts the list again. 3. Criterion: All words must be read accurately (100%) before spelling begins.
Oral spelling (visual cues)	1. Student looks at word. 2. Tutor says, "spell the word tall." 3. Spell all words once through.
Oral spelling (memory)	1. Tutor says word, student repeats word, student orally spells word. 2. Correction: (a) Tutor shows word and spells; student repeats; tutor starts list over. (b) For serious spelling problems, student spells by sounds, then tutor spells by letters. Finally, student repeats spelling by letters. Start list over.
Written spelling	1. Tutor orally dictates, student writes. 2. Tutor spells, student corrects. 3. Tutor computes % correct. Reinforces student, shows teacher.
Practice for dictation	1. Student copies "dictation" sentences once.

Appendix D

Sample Tutor Training For Reading: Schedule and Skills

DAY ONE: Discrminate word recognition errors: skips.

1. Trainer gives rule, It is an error when: The child leaves out a word.
2. Trainer reads orally from a story while each tutor follows on his copy of the story.
3. Trainer reads leaving out words.
4. Tutors circle all the omitted words.
5. Tutors tally number errors at end of page.
6. Trainer signals and tutors raise number of fingers that correspond to total number of errors made.
7. Trainer discusses tutor's accuracy in recording errors.

DAY TWO: Discriminate word recognition errors: additions and substitutions

1. Trainer gives rule: It is an error when: The child adds a word that is not on the page. The child says a wrong word.
2. Trainer orally reads passage making addition errors. Tutors follow along with their copy of passage and raise hands when they hear an addition error.
3. Next, trainer orally reads passage making substitution errors. On their copies, tutors mark words that are said incorrectly.
4. Tutors tally number of errors per passage made.
5. Trainer signals and tutors raise number of fingers that correspond to total number of errors.
6. Trainer helps tutors who are not accurate.

DAY THREE: Recording errors on data sheet

1. Trainer demonstrates how to record date and page number of data sheet and how to use the error data sheet when listening to a person read. Trainer tells tutors to keep eyes on the text and to tally errors with slashes on data sheet. Give rule: students must reread a "page" if they make more than [three] errors.
2. Trainer reads several paragraphs making all three kinds of mistakes, while tutors tally errors on data sheet.
3. At end of session, teacher checks tutors' accuracy and goes over problems.

DAY FOUR: Discriminate word recognition errors: tutor assistance

1. Trainer gives rule: It is an error if you have to help the student with a word. If your student stops because he cannot read a word, count to 5, then tell him the word.

2. Trainer orally reads a paragraph and pauses before several words. Tutors count to 5 before supplying the word.

3. Trainer gives next rule: It is not an error when the child repeats a word or sentence, or the child corrects his own errors without help.

4. Trainer reads passages making repetitions and self-corrections. Students raise hand when they hear these kinds of reading behaviors.

DAY FIVE: Tally errors of all kinds.

1. Using the error data sheet, students listen for all four kinds of errors and mark in appropriate place. Trainer includes self-corrects and repetitions while reading.

2. Trainer decides if each student is accurate, and gives individual help to those who have not mastered this skill.

DAY SIX: Error correction procedure.

1. Trainer teaches error correction procedure. This procedure should be the same for isolated word drill and oral reading errors in context. Trainer gives tutors the rule: when your student says the word wrong: POINT to the PART of the word the student said wrong and say "WHAT WORD?"

   If your student says the word <u>correctly</u>: Say, "READ THE SENTENCE AGAIN."

   If your student says it wrong OR doesn't know the word:

   POINT to the word and say: "LISTEN."

   Tutor then sounds out the word SLOWLY and says to the student "SAY IT SLOWLY" then, "SAY IT FAST" then says "READ THE SENTENCE AGAIN."

DAY SEVEN: Praising and Ignoring.

1. Trainer demonstrates how to praise appropriate behavior and ignore inappropriate behavior, stressing the importance of positive reinforcement. Each tutor creates a positive statement to say to his student and writes it on a bulletin board.

2. Trainer tells tutors to ignore inappropriate behavior and to redirect students to their task.

3. Tutors practice reading to each other, giving praise statements, and ignoring inappropriate behavior.

DAY EIGHT: Isolated Letter Sounds.

1. Using an overhead projector, the trainer demonstrates how to say isolated sounds, and tutors practice. Tutors respond orally in unison.

2. Trainer demonstrates: Trainer says sound
   Tutor says sound
   Start at beginning of row

3. Criterion: Tutor (later his or her student) must say each sound correctly within 2 seconds.

DAY NINE: Comprehension Questions.

1. Trainer demonstrates how to ask oral comprehension questions of a literal nature. Five or ten questions per story are provided so that it is easy to compute % correct.

2. Tutors tally answers:
   + = correct
   - = incorrect

3. Trainer demonstrates error correction:

   Tutor locates the page or paragraph the answer is on. Tutor repeats question and student silently rereads page until the answer is located.

DAY TEN: Pair up students and begin tutoring.

APPENDIX E

Secondary School Tutor Training:

Goals, Objectives and Schedule

PEER TUTOR TRAINING CALENDAR

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
			Sept. 9 Introduction to Training	10 Unit 1: Communication Lesson 1 Active Listening
13 Unit 1: Lesson 2 Non-verbal Congruent Messages Effective Feedback	14 Unit 1: Lesson 3 Trust Helping Relationships Motivation	15 Unit 1: Lesson 4 Problem Solving Decision Making Accept/Agree	16 Unit 2: Environmental Analysis/Learning Styles Lesson 5 Components	17 Unit 2: Lesson 6 Learning Style Inventories/ Questionnaire
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27 Unit 5: Lesson 12 Generating Main Ideas & Concepts	28 Unit 5: Lesson 13 Generating Main Ideas & Concepts *Behavior Mang.Projects Due	29 Unit 5: Lesson 14 Questioining Strategies	30 Unit 5: Lesson 15 Questioning Strategies Which method?	Oct. 1 Unit 6: Study Skills Lesson 16 Time Management
4 Unit 6: Lesson 17 Note Taking Methods/ Outlining	5 Unit 6: Lesson 18 Note Taking Methods/ Mapping	6 Unit 6: Lesson 19 Memory Techniques	7 Unit 6: Lesson 20 SQ3R Method	8 Monitored Tutoring Session

TRAINING GOALS AND OBJECTIVES

Unit 1: Communication Skills

Lesson 1: ACTIVE LISTENING

1. Student will be able to demonstrate active listening skills in role playing situations.

2. Given a variety of situations, student will be able to discriminate active or non-active listening.

Lesson 2: NON-VERBAL COMMUNICATION

1. Student will be able to describe or demonstrate what non-verbal behavior is and that it may provide either a positive or negative message.

2. Student will discriminate between congruent and incongruent verbal and non-verbal messages.

3. Student will demonstrate giving effective feedback.

Lesson 3: TRUST, HELPING RELATIONSHIPS, AND MOTIVATION

1. Student will be able to generate examples of how to demonstrate active, sincere interest and discriminate situations when teacher and/or friend roles are appropriate.

2. Given examples, the student will be able to discriminate those situations which contribute to a helping role vs. creating dependency.

3. Student will be able to define some of the things that motivate them.

4. Student will be able to create examples of motivational strategies.

Lesson 4: PROBLEM SOLVING, DECISION MAKING, AND ACCEPTANCE VS AGREEMENT

1. Given a situation, student will demonstrate the ability to use the appropriate problem solving steps.

2. Given a situation, student will demonstrate the ability to give a response that indicates acceptance without agreement.

TRAINING GOALS AND OBJECTIVES (con't)

Unit 2: Classroom Analysis and Learning Styles

Lesson 5: ENVIRONMENTAL ANALYSIS

1. Student will demonstrate an understanding of three critical areas of classroom environment by correctly completing appropriate forms after conducting interviews and classroom observations.

Lesson 6: LEARNING STYLES

1. Given the term "learning style" the student will be able to describe the concepts visual, auditory, kinesthetic and tactile as they apply to learning new material.

Unit 3: Behavior Management

Lesson 7: BEHAVIOR MANAGEMENT

1. Students will be able to define and give an example of the following terms: on-task, off-task, pinpointing, target behavior, social reinforcer, tangible reinforcer, extinction, shaping appropriate behavior and inappropriate behavior.

2. Students will demonstrate the ability to pinpoint and chart a target behavior.

Unit 4: Task Analysis

Lesson 8: TASK ANALYSIS

1. Student will be able to pinpoint a task, break it down into smaller behaviors or steps or teaching, and arrange those steps in a logical sequence.

Lesson 9: TASK ANALYSIS

1. Student will be able to determine entry skill for teaching a task and evaluate outcome when the task is completed.

Unit 5: Instructional Methods and Strategies

Lesson 10: DIRECT INSTRUCTION

1. Students will demonstrate how to focus attention and follow a model-lead-test format.

Lesson 11: DIRECT INSTRUCTION

1. Same as Lesson 10

TRAINING GOALS AND OBJECTIVES (con't)

Lesson 12: GENERATING MAIN IDEAS AND CONCEPTS

1. Given a sample assignment, students will be able to pinpoint the concept(s) the assignment is based on, and specify steps to follow when teaching a student to categorize.

Lesson 13: GENERATING MAIN IDEAS AND CONCEPTS

1. Given a set of sample notes, student will demonstrate teaching main ideas and concepts.

Lesson 14: QUESTIONING STRATEGIES

1. Student will be able to list the six levels of Bloom's Taxonomy and give a short definition for each.

2. Student will generate an example question for each level of the taxonomy.

Lesson 15: QUESTIONING STRATEGIES

1. Student will demonstrate an understanding of monitoring and adjusting, given a role play situation.

2. Student will generate examples of subject matter and skills that lend themselves to each of the three instructional methods.

Unit 6: Study Skills

Lesson 16: TIME MANAGEMENT

1. Student will be able to state at least 2 reasons why time management is a critical study skill.

2. Student will demonstrate the ability to use a 2 week plan sheet.

3. Student will demonstrate how to plan for completing long term assignments, using a monthly calendar.

Lesson 17: NOTE TAKING METHODS - OUTLINING

1. Student will be able to list the three steps for the outline method of note taking.

2. Student will demonstrate the ability to use outlining given a simulation exercise.

Lesson 18: NOTETAKING METHODS - MAPPING

1. Student will be able to list the three steps for the mapping methods of note taking.
2. Student will demonstrate the ability to use mapping techniques given a simulation exercise.
3. Student will demonstrate the ability to utilize abbreviations and symbols when doing note taking.

Lesson 19: IMPROVING YOUR MEMORY

1. Student will be able to define mnemonics and explain how they are used.
2. Student will demonstrate how to use the Link Method as a memory technique.
3. Student will demonstrate how to use acronyms as a memory technique.
4. Student will demonstrate the ability to use acrostics as a memory device.

Lesson 20: A WAY TO READ TEXTBOOKS

1. Student will be able to list the steps to the SQ3R method.
2. Student will demonstrate use of the SQ3R method in a role play situation.

APPENDIX F

Key to Self-Assessment

KEY TO SELF-ASSESSMENT

1. D
2. C
3. D
4. A
5. A
6. A
7. D
8. F
9. F
10. T
11. F
12. T
13. T
14. T
15. F
16. T
17. F
18. F
19. F
20. F
21. F
22. T
23. P. 8-15
24. P. 19-32
25. P. 32-33
26. P. 34-40
27. P. 48-49
28. P. 50-53
29. Appendix